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AUTHOR DuCharme, Catherine C.
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ABSTRACT

A qualitative study examined the role drawing plays in the writing processes of young children (ages five to nine), and how the role changes with the individual's growth as a writer. Sixty-seven children enrolled in a multiage classroom (K-3) were systematically observed to identify and describe various drawing functions in their writing processes. Eight case study children were selected from this group to allow for in-depth analysis. The role of drawing in writing development was found to be significant; nine specific functions were identified in three main categories. Implications for early childhood educational programs include the importance of preserving learning environments that are broad-based and allow for self-selection of drawing and writing activities in order to facilitate growth. (Five tables of data and 11 figures of students' drawing and writing are included; 14 references are attached.) (Author/RS)

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The Role of Drawing in the Writing Processes of Primary Grade Children

Catherine C. DuCharme

Graduate School of Education

California State University, Long Beach

1250 Bellflower Boulevard

Long Beach, CA 90840-2201

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Running head: THE ROLE OF DRAWING IN WRITING DEVELOPMENT

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Abstract

Qualitative research design forms the methodology of this study that examined the role of drawing in the writing processes of children ages five to nine. This study attempted to answer the following questions: What role does drawing play in the writing processes of young children? How does the role of drawing change with the individual's growth as a writer?

Sixty-seven children enrolled in a multiage classroom (K-3) were systematically observed to identify and describe various drawing functions in their writing processes. Eight case study children were selected from this group to allow for in-depth analysis.

The role of drawing in writing development was found to be significant; nine specific functions were identified and described in three main categories. Implications for early childhood educational programs were discussed including the importance of preserving learning environments that are broad-based and allow for self-selection of drawing and writing activities in order to facilitate growth.

The Role of Drawing in the Writing Processes of Primary Grade Children

This study analyzed the role of drawing in the writing processes of primary grade children. Recent studies of children's writing refer to a connection between drawing and writing. Many children draw while engaged in writing behavior. Some children draw before writing, while others draw after or during the writing act. Some children choose not to draw at all. In any case, drawing appears to serve a function for many children. The goal of this present study was to answer these questions: What is the function of drawing in the writing process and how does it vary from one individual to another? Does the role of drawing in children's writing behavior change with the child's growth and development?

The drawing and writing connection has been discussed throughout recent literature on literacy development in the young child (Baghban, 1984; Bissex, 1980; Calkins, 1983, 1986; Dyson, 1986; Graves, 1973,1981; Harste, Woodward, and Burke, 1984). Calkins (1983) and Graves (1983) have written about the relationship of drawing to writing as a strategy for the planning phase during the writing process. However, Calkins (1986) recently questions the notion that drawing is merely a pre-writing strategy. Bissex (1980) notes in her study of her son's writing development that "drawing tended to be more illustration than context" (p. 38). Bissex also comments on the drawing/writing connection:

> Although the close relationship between drawing and writing is a commonplace in histories of writing systems, our society regards drawing so much as pictorial and writing so much as phonetic that the relation between the two is less evident to adults than to children, who are not yet as fully acculturated. (1980, p. 202).

It appears that there is a rich intermingling of symbolic processes as young children develop literacy behaviors (Bissex, 1980; Dyson, 1986). In a case study of her daughter from birth to age three, Baghban (1984) notes that "Giti used oral language, reading, writing, and drawing as partners within a larger system of mutually reinforcing processes" (p. 97).

Few studies have been conducted on the role of drawing in the writing processes of young children. With the exception of Dyson's (1986) article, only two very recent studies could be found that explore the relationships between drawing and writing. Skupa (1985) conducted a study with thirty-nine second graders and concluded that drawing is a viable planning strategy for second grade children. A study by Zalusky (1982) analyzed the relationships between writing and drawing in first grade children. Her statistical analysis revealed a strong correlation between drawing and writing.

In this present study young children were observed as they engaged in the activities of drawing and writing in order to

analyze relationships between drawing and writing processes.

This was not a study of the children's graphic development, but rather an examination of drawing behavior as it related to the emergence of writing. The findings of this study of the role of drawing in the writing process are limited to the classroom setting and the group of children I studied. (Although my analysis and interpretations are firmly grounded in the data, they must be tested by other researchers amongst other five- to nine-year-olds in varying classroom environments).

Research Method

Qualitative research methods were used in this study. Prior to entering the field, several foreshadowed questions were composed to guide the research. The selection of the classroom and the case study participants was based on specific pre-determined criteria. Various "slices of data" were gathered in the field including observational field notes, unstructured interviews, audio recordings, daily student products, and data log entries charting student behaviors. Data collection and analysis occurred simultaneously. The ongoing analysis of the data enabled the formulation of categories that naturally emerged from the data as well as provided future directions for inquiry. Data analysis was systematic and inductive; categories and patterns of analysis were firmly grounded in the data.

Foreshadowed Questions

Qualitative researchers often use foreshadowed questions to

guide their research (Goetz and LeCompte, 1984). The following questions were formulated to focus this study:

1. What role does drawing play in the writing processes of the young child?

2. How does the role of drawing change with the individual's growth as a writer?

3. In what ways does drawing appear to affect writing development in individual children?

4. What developmental patterns can be observed with regard to the drawing function and the number of words contained in the written products?

Selection of the Classroom

The following criteria were pre-established to aid in conducting the study. In order to answer the research questions, I needed to find a classroom which:

1. consisted of children ranging in age from five to nine years old

2. pursued writing and drawing activities on a daily basis

3. was located at least within fifty miles of my home

4. had a teacher that was willing to allow me access to the classroom and to the children as necessary

A classroom fitting all of the above criteria was selected. Located in a suburb of Southern California, the children in this multigrade classroom were from middle and upper-middle class homes. All of the children were white including one male student with Down

Syndrome. The class consisted of sixty-seven children ranging in age from five to nine years, two teachers, and an aide. Drawing and writing activities were an integral daily and well-established routine amongst the children and adults alike. The class was located within a reasonable distance from my home and the two teachers welcomed me with enthusiasm into their world.

Selection of the Eight Case Study Children

The children selected for case study analysis met the pre-established criteria to insure that the children would reflect overall the greatest variation of achievement and age level. (For a more detailed account of the procedures involved refer to DuCharme, 1990).

Data Collection

Descriptive ethnographic data was collected over a nine-month period from September 1987 to May 1988. I was a participant observer in the classroom from 8:00 A.M. to 12:00 M. during the children's independent work time for a total of 125 hours. Data collection proceeded through four overlapping phases based upon specific varying research purposes or objectives.

Phase One

The initial phase might be characterized as "getting my feet wet". The first two classroom visits provided an opportunity to observe the class functioning as a whole. I observed and described whole class activities and learning environments with particular regard to drawing and writing, recording the observational notes in

the field and then re-writing and revising the notes into detailed narrative form as soon as possible after the field observation (Bogdan and Biklen, 1982). I collected data on the physical setting of the classroom. I studied the procedures and contexts of the daily drawing and writing activities. I also conferred with the lead teacher to decide upon procedures for collecting the daily drawing and writing products of the case study participants.

Phase Two

During the first few visits, I also began to establish a rapport with the participants. The teacher arranged a time for me to talk to the class of sixty-seven children as a group on September 9. I introduced myself and explained why I was visiting:

> Children, I am very excited that I will be able to visit your class this year. I will be in and out at various times throughout the year. The reason I will visit is because I am going to school, too, just like you! I am writing a BIG paper and I need to do research in order to write my paper. I need your help.
>
> I would like to sit with each of you and observe you as you write and draw. Sometimes I will ask you questions about your drawing and writing because I am interested in your ideas. Sometimes I will just sit quietly next to you and write on my yellow pad.

During the remainder of Phase Two, from September 9 to January 13, I observed individual children in the process of drawing and writing and conducted interviews with individuals about their ideas regarding their own drawing and writing, charting the daily drawing/writing activities of each child for a period of forty-eight school days. At the end of Phase Two, I had spent 36-1/4 hours in the classroom observing forty-two different children from

the total class of sixty-seven. A total of sixty-six observations had been made of the forty-two children. This data was coded and categorized in order to identify and describe the role of drawing in the writing act. I had interviewed sixty-two of the sixty-seven children.

Phase Three

My purpose during the third phase of my data collection was to choose eight individuals for a case study examination and collect case study data. The data collected in Phases One and Two provided sufficient information to make the selection of the eight case study children.

From January 13 to February 29, I concentrated my efforts on collecting case study data. Ongoing data analysis yielded emerging hypotheses about the role of drawing in the writing process that needed to be checked against the class as a whole. As a result, Phase Four began.

Phase Four

During Phase Four, from March 2 to May 4, emerging hypotheses were tested amongst children in the class as a whole, although I continued to collect case study data.

At the end of Phase Four, I had observed every child in the class between one and three times, for a total of 199 observations. Ninety-two observations were made of the eight case study children. One hundred and seven observations were made of the fifty-nine other students in the class.

Ethnographic Data Collected

Throughout the four phases of data collection, six types of ethnographic data were collected including: (1) a chart of each child's daily drawing and writing activities for forty-eight school days, (2) children's dated drawing and writing products, (3) audio recordings of individuals as they were engaged in drawing/writing acts, (4) observational notes to form a core of data, (5) dated log entries charting individual student's writing acts noting when the child draws and the function drawing appears to serve, and (6) informal child and teacher interviews.

Charting of Activities

At the end of each school day from September 25 to December 15 (a total of forty-eight school days), the teachers checked each child's written work for the day. One teacher kept a daily log of each of the sixty-seven children's drawing/writing activities on a form that I developed (See Figure 1). I compiled the daily log

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Insert Figure 1 about here

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sheets periodically to provide both an individual profile and a class composite of the daily drawing/writing activities that could be analyzed according to variables such as age and frequency distribution.

The drawing and writing products. The daily drawing and writing products of each case study participants were collected.

Due to the fact that the teachers saved, dated, and filed the products of each child, it was possible to obtain dated products produced by the case study children from September 1987 to May 1988. It was also possible to obtain dated samples of six of the children's drawing and writing from the previous years they had spent in the class. For example, for the two third grade children, dated samples of their work went as far back as their kindergarten year (1984-85). The two second grade children's files went back to 1985-86. The two first grade children's files went back to 1986-87.

The children's drawings and writings produced during each observation session were also collected. The products varied in size and shape, averaging between nine- and eighteen-inches in width. Each product was photocopied and filed for easy access and retrieval for data analysis. A total of 1,862 student products were collected for analysis; of these, 1,731 products were collected from the case study participants, including 744 drawings and 987 writings. From the ninety observations of the other fifty-nine children, 131 products were collected, including 58 drawings and 73 writings.

Audio recordings. Audio recordings were gathered while individuals were engaged in the process of drawing and/or writing as I believed that the recordings would provide valuable information which would aid in the development of categories for analysis. I used a small, compact, battery-operated tape recorder.

As I sat down next to a child or a cluster of children that were drawing and writing, I gently placed the tape recorder in the center of the group. Initially many of the children were aware of the tape recorder and several individuals commented or asked me why I needed it. I was concerned that some children might alter their behavior as a result; however, it quickly became accepted by most of the children. Most children discontinued their interest in the presence of the tape recorder.

The audio recordings helped me to re-create the observation sessions as I analyzed my field data. I collected a total of sixty hours of audio recordings including spontaneous speech and interviews.

Observational field notes. As a participant observer, I observed all children in the class until I noticed an individual drawing or writing. Then I approached the child or group of children as a non-threatening, interested adult. I asked if I could sit next to them for a while. Most of the time, the children said, "Sure!" Occasionally, a child would prefer that I not join him or her, so I deferred to his or her wish and proceeded to another willing participant. At that point, I sat down next to the child, turned on the tape recorder, and began taking detailed observational notes on the events that occurred.

Occasionally, I intervened to ask a question to clarify an act during the process. Typically, however, I observed in an unobtrusive manner until the child declared, "I'm done." Then I

proceeded to converse with the child about his/her activity, posing questions as they occurred to me in order to clarify the child's behavior and to examine the child's reasoning underlying his/her actions.

I wrote a total of 257 pages of observational notes in the field. My notes included detailed descriptions of the writing and drawing behaviors of the children being observed, conversations during the process, my emerging hypotheses, comments/notes to myself, and things to check on the following day. My field notes, then, formed a core of data. After each day in the field I re-read my notes and jotted down ideas in the margins as they occurred to me.

Dated log entries. In addition to my field notes, I also kept a log noting when drawing occurred during the individual's writing behavior and what function it appeared that the drawing served in the writing process.

Informal interviews. I conducted informal interviews with each chid in the class for two purposes. I believed that the children's responses would yield another source of information that might enlighten me as to the function of drawing in the writing process either by corroborating information gathered or by providing conflicting data to push me ahead in my inquiry. Sometimes I accomplished my purposes in one interview, other times I interviewed children repeatedly. Throughout the study, I followed up on leads resulting from my observation sessions.

Sometimes a child would exhibit a behavior and I would feel it necessary to look more closely at that behavior. During these periods of renewed inquiry, new questions were formulated in my mind. I used the children as informants then, asking them my questions. I systematically questioned the children, although I used an unstructured, conversational approach to the interviewing.

In order to analyze the interview responses in depth, I also devised a worksheet to fill in noting the questions asked and the child's responses (See Figure 2). The children's responses were

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Insert Figure 2 about here

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recorded on the worksheets verbatim. Next I developed categories through inductive analysis of individually noted responses on the worksheets.

I also interviewed children during and/or after the observation session to allow them an opportunity to clarify, interpret, and state their rationale for their own behavior. I conducted a total of 185 interviews about the children's views on drawing and writing relationships. I interviewed each child between one and four times during the course of the entire study. I interviewed each of the eight case study children eleven or twelve times.

Data Analysis: The Children As A Group

The Context of the Study

The classroom. The classroom consisted of a forty-three- by seventy- foot space. The two teachers had arranged and organized the room into several small areas for activities (See Figure 3). The classroom

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Insert Figure 3 about here

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library area consisted of three couches and two comfortable chairs, along with book display units holding more than 1,000 books.

One entire lengthwise side of the classroom was bordered by windows and a ledge. On the ledge there were many large, potted, rare plants along with cages housing several birds, a chinchilla, and other animals that came to visit during the school year. In other corners and alcoves in the room, there were aquariums filled with snakes, turtles, and tropical fish.

Each child had a desk in which to keep belongings. Each also had a mailbox. There was a large open space on the carpeted floor that served as a meeting place for class discussions, group sharing, and singing.

The curriculum. The teachers developed an emerging curriculum with the children. The daily schedule described below was followed each morning from 8:00 A.M. to 12:00 M. As the children entered the classroom doors, they went to acknowledge their attendance by

moving their round name tag to the peg board labeled "I am here. It is (the day's date)". Then the children went to their desk where they would choose to do one of their morning jobs - reading, writing, or math. The child would choose an activity and begin immediately working on it. Throughout the morning, every child was expected to do some reading, some writing, and some math. If the children completed some work in each of these areas, they could do additional reading, writing, and math, or hold one of the classroom pets, or play games.

The children were not forced to adhere to a set curriculum. On the contrary, they chose their own activities within a carefully designed classroom structure with teachers that respected each of them as individuals, and held high expectations for their growth and development.

Daily Drawing and Writing Activities

As a result of a review of the current research as well as ten years of experience as a classroom teacher, I hypothesized that drawing plays an important role in the composing process and that the function of drawing would change with the developmental growth of children throughout the primary grade school years. I suspected that the youngest children would rely on a rich intermingling of drawing and writing to convey their messages while older children would be more able to convey their meaning through the use of written language, thus not needing to rely on drawing within the composing process.

An initial investigation was conducted from September 25 to December 15. The drawing and writing activities of the sixty-seven children in the multigrade classroom were logged and charted each day. The research was conducted within the natural setting of the classroom consistent with the pre-established classroom procedures. Each day the children self-selected their daily activities from a variety of tasks and completed them in any order they chose. Possible writing activities included Picture Writing, Writing Book, and Computer Writing. If the children chose to do Picture Writing, they would draw, paint, or create something before getting writing paper. The teacher used a glue stick to attach the writing paper to the finished picture, painting, or creation. After the children wrote in pencil, they would have their writing proofread, dated, and initialed by an adult. Then the children would "ink" the piece of writing with colored felt pens. If the children chose to write in their Writing Book, they would not draw at all, nor would they be expected to "ink" their writing, but they would have their writing proofread, dated, and initialed by an adult.

Six computers were in the classroom. If the children chose to work on the computer, they would sign up for either Computer Drawing or Computer Writing. A supervisory parent would permit the next child on the list to come to work on the computers as availability allowed.

The following chart summarizes the children's activities over

the forty-eight school days (See Table 1). The resulting totals

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Insert Table 1 about here

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support the hypotheses that the role of drawing in the writing process is important to the youngest children as evidenced in the frequency of the activity amongst the kindergarten and first grade students. The findings also support the hypothesis that the role of drawing changes with development in writing. From a total of 825 drawings, 32% were drawn by kindergartners, 25% by first graders, 26% by second graders, and only 17% by third graders. The amount of Picture Writing decreased with increased age from 29% of all Picture Writing done by the younger children to only 17% done by the oldest members of the class. Only 14% of all the Writing Book activities were completed by the kindergartners, while 28% of the total was done by the third graders.

While these findings are merely suggestive, they do support the notion that the role of drawing in the writing process does provide an important function for young children especially, and raises the question of how the role of drawing changes with development.

The Role of Drawing in the Writing Process

Identification of Various Drawing Functions

A total of 199 drawing and writing activities were recorded on a chart. (Figure 4 provides an illustration of sample entries).

Insert Figure 4 about here

The record chart was filled in daily as soon as possible after the field observation from September 9 to May 4. As the study progressed, the various drawing function categories emerged from the data. As a category became saturated, a new category was formed. Upon completion of the study, a summary list was compiled of the various functions drawing appeared to serve for the young writers. The subsequent list was refined yielding three basic functions and nine specific functions of drawing in the writing processes of the sixty-seven primary grade children:

1.0 Contextual
    - 1.1 Objects to label
    - 1.2 Focus or general theme
    - 1.3 Re-creates an event or experience
    - 1.4 Access to imaginary worlds
    - 1.5 Pleasurable activity

2.0 Communicative
    - 2.1 Clarification
    - 2.2 Illustration
    - 2.3 Decoration

3.0 Transitional
    - 3.1 Maintains and supports the flow of ideas

Drawing provided contextual, communicative, and transitional

functions for the young writers. Often these various drawing functions overlapped in the child's writing process. It was not uncommon in the observations to note that one child's drawing behavior may provide a context for writing as well as a transitional function during the actual writing act itself. The overlapping functions occurred in various combinations. Some children drew before, during, and after writing. Some children drew only before writing, while others drew only after they finished writing. Table 2 summarizes when the children engaged in

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Insert Table 2 about here

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drawing during the writing process (before, during or after writing). The chart reveals that most of the drawing was done before the writing. Fewer observations were made of children drawing during and after writing.

Several interesting trends are evident from the summary chart as well. The third grade children were observed drawing less often before writing than the younger (kindergarten, first, and second grade) children. The older children drew after writing more often than the younger children. More first graders drew during the writing act than any other age group.

Some children were observed writing in their Writing Books, thus not drawing at all. It is interesting to note that these thirty-seven instances revealed similar characteristics. The

majority of the children's writings without pictures were focused on (a) true events which had taken place in their lives or (b) expressions of their feelings. There were only three exceptions to this pattern. Two second grade children wrote imaginary stories in their Writing Books without the aid of drawing and one first grade child wrote a Mother Goose rhyme from memory without drawing.

Other observable patterns of the role of drawing in the writing process became evident through the tabulation of three factors: (1) grade level, (2) specific drawing function, and (3) when the drawing activity occurred with the writing process. (See Tables 3 and 4). More drawing was done by all of the children

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Insert Tables 3 and 4 about here

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before writing than at any other time. The drawing provided a context for writing in terms of providing (a) objects to be labeled, (b) a focus or general theme, (c) the re-creation of an event or personal experience, (d) access to invented imaginary worlds, and (e) a pleasurable activity in itself that often resulted in the generation of ideas for writing.

The frequency of the different drawing functions and the time of their usage within the writing process revealed that the various drawing functions appeared at different times during the writing process. For example, drawing served as a contextual function for children prior to the writing, and the communicative

function of drawing was apparent both during and after writing, although most often afterwards. The transitional function of drawing appeared during the actual writing act with only four exceptions.

Discussion and Examples of the Various Drawing Functions

1.0 The Contextual Function

1.1 Objects for labeling. The most frequent function of drawing for the children in this study was to provide for objects that could be labeled with words. The youngest children developed a recurring phrase to begin their labeling stories. One child consistently drew pictures of objects and wrote "Here's a ...". Other young children labeled their drawings with words, beginning with "This is ..."

Table 5 shows a significant reduction in the frequency of the observed behavior amongst the third grade children in this study from an average of 25 amongst kindergarten, first, and second grade children to 11 amongst the third grade children. Figures 5 and 6

Insert Figures 5 and 6 about here

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illustrate a story and picture jointly composed on the computer by two eight-year-old boys. They drew the picture on the computer prior to composing their story with the aid of the word processor. From the first four sentences it would appear that the drawing provided an initial object to label and describe, however, the two

boys venture beyond the limitation of a labeling activity to produce a simple narrative. The drawing appears to have provided for an initial object for labeling as well as providing a focus or general theme upon which to write.

1.2 Focus or general theme. The second most frequently observed drawing function served to focus the young writer. The drawing activity provided the general theme for the writing. For example, many children would begin to draw war, a beach party, a birthday party, hearts, bugs, a rainbow, race cars, or a surfer without prior knowledge of what they would actually write. The drawing helped the children to focus, thus providing a self-initiated, meaningful context for writing.

1.3 Re-creates an experience. The children's drawings provided a context for writing in fourteen instances allowing for a graphic representation or re-creation of an experience. In Figure 7 an eight-year-old drew first and then wrote about her experience relaying more detail in her words than through graphic form.

Insert Figure 7 about here

1.4 Access to imaginary worlds. Many children drew imaginary worlds which they then could label, list attributes or describe what happened there in writing. For example, children were observed to draw and write about such invented worlds as

Diamond Land, Shrink Land, Happy Land, Color Land, and Leprechaun Land. Some children wrote about imaginary worlds or "special lands with their own ways" in which an Arab chases a witch, and Santa Claus exists together with an alien.

1.5 Pleasurable activity. For some children, drawing was a pleasurable activity in itself. Initially it appeared that possible drawing behaviors consisting of play with color, line and form may not be related to the writing at all. However, upon further analysis, the drawing of designs along with providing an aesthetic appeal for the children, also provided a context for writing. Sometimes the youngest children romanced their squiggles and designs into an object which they then labeled by writing "This is a ..." For the older children, designs were drawn prior to writing (See Figure 8) without intent of representing any one theme or object. The manipulation of color and line were of more import upon the initial behavior. In Figure 8 an eight-year-old girl remarked that she didn't know what she wanted to write yet, but she liked the colors and drawing with "smelly" markers. She began to draw her design frequently pausing to smell the various marking pens. She repeated zigzagging lines, dots and stars. Then she

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Insert Figure 8 about here

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announced that she would make a book about Leprechaun Land, a sequel to a book that she had written the previous school year. It

could be argued that the child's drawing provided access to an imaginary world, also. In many instances one or more drawing functions were observed in a single writing activity.

2.0 The Communicative Function

2.1 Clarification for self or others. Some of the children observed drew for themselves and others. A five-and-a-half-year-old told me that she drew pictures "so they can see it." The younger children drew to show what they felt they could show better with form than with conventional symbols of print. Older children did the same, although they interpreted the text through drawing rather than supporting their message through drawing. For example, Adam, an eight-year-old, was writing a book about the human body. He was reading from a library book and writing his own version of the text. Following the format of his source, he had a chapter for major body parts. The structure and content of his writing was influenced by the library book although he did more than simply paraphrase the published text. Upon completing his writing, he decided to draw a picture of a baseball player throwing a ball " 'cuz the brain controls the arm." Adam's drawing clarified the information he had just read and written. Nowhere in the library book was there a picture of this kind. The illustrations in the book were diagrams of body parts. Adam's drawing was more of an interpretation of his understanding of the information in the text.

2.2 Illustration. Drawing that served to illustrate or extend the writing occurred after the writing in all but two cases.

In one case, the child's drawing was an illustration of a prior writing activity. Kari, an eight-year-old, drew a picture of the Golden Gate Bridge and told me about her family's trip to San Francisco. The day before she had written about this trip in her Writing Book. In the second case, a second grade boy was making a book about world records. For each entry in his book he used the same procedure. First he thumbed through the volume of world records, looking at photographs. Then he asked an adult to read aloud about the picture. He discussed the world record with the adult in an effort to retain the facts. He verbally announced what he was going to write word for word and then he drew his own picture to illustrate his spoken words. Last, he wrote down his words just as he had planned initially.

Drawing behavior that illustrated and extended the text occurred after the actual writing. It is of interest to note that many more of the older children chose to use drawing for this purpose more often than the younger children. The one kindergartner that drew after writing was involved in making a book about trucks titled "About Trucks". He opened his book to the first page and wrote: "Their are many kinds of Truck's. Their are gravel truck's oil truck and their are farm truck's. [sic]" Then he said, "Now I draw my pictures." He drew the pictures after writing each page of text on the opposite page to illustrate what he'd written on each of the five pages in his book.

Only two first grade children were observed using drawing as

illustration and in both cases, the children were writing books about true life experiences that they had recently had. Shaun wrote about a pigeon that entered his family's home and the excitement that occurred as a result. Alison wrote a book about her grandma's pet dog, Shadow, dying and dedicated her book to her grandmother who was so unhappy about the event. Alison wrote the sequence of events leading to her grandmother's dog's death including the veterinarian's diagnosis of the cause of death: heart worms.

2.3 Decoration. Occasionally children would draw after writing to decorate their piece for aesthetic purposes. Of the seven instances where this was observed, four of them involved making greeting cards for family members or friends. The children in these four cases had decided to make cards. Their purposes were clear; one child made a card for her aunt that began "For a Pregnant Mom Who Likes Kids." Upon completing their messages, these children used drawing as an extension of their writing in an effort to make their cards aesthetically pleasing. In the other three instances where drawing was decoration for the children's writing, all of the three children were third graders and in each case, they verbalized an intent to make their pieces of writing "prettier" or "more colorful" for their peers that might read their story when it was displayed in the classroom library.

3.0 The Transitional Function

3.1 Maintains and supports the flow of ideas. Twenty-five

observations were made in which children used drawing as a means of maintaining and supporting their efforts to write and convey a message. All twenty-five instances occurred during the process of the writing act. Most often, first graders were observed to use drawing for this purpose. Many of the children verbalized a belief that the picture and the text must be congruous. This belief that many children verbalized while being observed is noticeable in the children's written products. Often the children added objects to their picture to ensure congruences with their text. Other times they added words and phrases to their text to fit their picture. The matching of picture and text, then, supported and perpetuated the writing episode. In Figure 9, a first grade boy produced writing to match his picture. He wrote: "This is World War Two.

Insert Figure 9 about here

A force field is protecting..." Then he stopped to color in with a red crayon more fireballs. (See Mark A on Figure 9). He made combat and explosion noises as he drew scribbles and lines. (See Mark B on Figure 9). He talked to another child sitting nearby; then he drew a rectangle and asked how to spell oil. (See Mark C on Figure 9). After more talking about objects in his picture including the F15 and Voltran, he drew more oil and gasoline (See Marks D and E on Figure 9). After more sound effects and rereading his story composed thus far, the boy continued writing until he had

finished his story (See Figure 10).

Insert Figure 10 about here

The children for which drawing served a transitional function drew during the writing process. They added objects, lines, and splotches of color for detail, emphasis, or for securing congruences. By vacillating from the drawing to the writing and vice versa, the young writers were able to continue the flow of ideas for writing.

An interesting pattern emerged in this category nonexistent in the other categories. Amongst the twenty-five observations of the transitional function, only seven cases involved young female writers. Eighteen of these observations made were of boys utilizing drawing in this way as a keep-going strategy.

The categories described above cluster rather neatly around the time of which they are used within the writing act (See Figure 11). Drawing provides a contextual function before writing, a

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Insert Figure 11 about here

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transitional function during the writing process, and a communicative function after writing in terms of extending and elaborating upon writing through illustrations and decorations. The only exception is in regard to any drawing that is done for

clarification which serves a communicative function and is usually done during the writing episode.

The children's drawing behavior then served positive functions and aided significantly in their writing. In just a couple cases, however, drawing served a negative function. There were two instances where a third grade boy and third grade girl changed their minds about what to write due to their self-perceived lack of ability to draw the scene realistically. The young girl decided to write in her Writing Book to solve her dilemma, thus avoiding the necessity of drawing the picture while maintaining and preserving her desire to write about her experience. The young male writer simply discarded his initial theme and chose another topic on which to write. He chose a theme that he felt he could represent graphically to his satisfaction.

Data Analysis: The Case Studies

The eight case studies are too lengthy to be included in this article (see DuCharme, 1990). However, the following statements contain a brief overview of the eight case study children noting similarities and differences observed.

The Case Studies: An Overview

Drawing served a variety of functions for all eight case study children. Great variability was observed amongst the eight children as pertains to the role of drawing in their writing processes. Table 5 summarizes the categories of drawing functions and the frequency with which each category was observed in the

children's writing behavior. (The children's names are presented in chronological order Stephen being the youngest case study participant and Courtney H. the eldest). Striking similarities and differences were observed in the number of times each function was observed amongst the children.

Insert Table 5 about here

Similarities. For Stephen, Kelly, Carly, and Bobby C. drawing often served a contextual function as it provided objects to label and access to imaginary worlds. Stephen, Bobby C., and Carly were the only case study children observed to draw during the writing process to maintain and support the flow of ideas. Mikey, Courtney L., Bobby F., and Courtney H. were often observed to use drawing as a vehicle for providing a focus or general theme. Bobby F. and Courtney H. were the only case study children to extend their writing through illustration.

Differences. Interesting differences in the role of drawing are evident particularly as it relates to the chronological age of the case study children. For example, the five- and six-year-olds approached drawing as spontaneous play which yielded objects to label and access to imaginary lands thus creating a context for writing. While drawing also provided the seven- and eight-year-olds with objects to label, their drawing functioned more often to provide a general theme or focus for their writing. It is also of

interest to note that only the two oldest case study children were observed to draw after writing, illustrating their texts.

Discussion

The Role of Drawing in the Writing Process

The drawing functions identified. Drawing served three broad functions and nine specific functions for the young writers. Often two or more drawing functions overlapped in a single writing session. The children's drawing behavior provided a context for writing as it provided for:

1. objects to label
2. a focus or general theme
3. the re-creation of an experience or event
4. access to imaginary worlds
5. pleasurable activity in itself

Drawing served a communicative function as it provided for clarification, illustration, and decoration. Drawing also served an important transitional function for some children as it provided support and maintained the flow of ideas.

Drawing functions vary amongst individuals. The children observed in this study employed the drawing functions differently. There was no one way or set of ways that the drawing functions were observed. Each individual child used a unique combination of the drawing functions while in the process of writing.

There were similarities observed, however, with regard to the drawing functions and when the children drew during the writing

process.

The drawing functions and the writing cycle. The drawing functions identified in this study clustered neatly around the writing cycle. Drawing served a significant role before, during, and after the writing act. Drawing served a contextual function before writing, a transitional function during the writing process, and a communicative function after writing.

The Role of Drawing Changes with the Individual's Growth as a Writer

The data gathered amongst the entire group of sixty-seven children suggested that the role of drawing changes with the individual's growth as a writer. An analysis of the children's responses to the informal interviews revealed that drawing was helpful to them in four different ways. Drawing was perceived by the group as a whole to:

1. provide an object to label
2. act as a catalyst for generating ideas
3. concretize abstract thought
4. allow for reflection

A case study examination yielded findings that change did indeed occur with respect to the role of drawing as the individuals developed as writers. For example, although drawing primarily served a contextual function for Courtney L., a change in that role was evident as she increasingly relied on her drawings to provide a focus or general theme rather than simply providing objects to

label. A product analysis of the early drawings and writings of the older case study children suggested that drawing had served a contextual function as it provided access to imaginary worlds although during the study they were not observed to use drawing in this way at all.

Overall trends were observed as to the way in which the role of drawing changed in the eight case study children. They are as follows:

1. An increased reliance on drawing as it provides a focus or general theme rather than simply an object to label was observed as the child grew in competence as a writer.

2. An increase in the child's age was correlated to a decrease in the use of drawing as providing access to imaginary worlds.

3. Drawing as pleasurable activity was especially significant for the youngest case study children.

4. The frequency of identification of drawing as clarification and illustration increased with chronological age.

5. Drawing as transition was especially significant for the six-year-olds and reflected their belief that the picture must match the text.

Drawing Affects Writing Development in Individuals

The data suggest that parallel development occurred in terms of the individual's drawing and writing. The children's individual development centered about two basic principles of growth:

1. repetition of form
2. sequential and directive order

Repetition of form. The individual children in this study were involved in problem solving activities when they drew pictures and wrote stories. They often used repetition of form in their pictures. It can be argued that the repetition of form also manifested itself in the ubiquitous labeling phrase "This is a ..." The individuals in this study used repetition as an avenue for future growth.

Sequential and directive order. The individuals in this study displayed a pattern of growth that was sequential and directive. The trend observed was compatible with the orthogenetic principle (Werner & Kaplan, 1963). The individuals' growth reflected a gradual tendency towards increased differentiation of the symbolic processes. Kelly, Stephen, Carly, and Bobby C. displayed tacit knowledge that gesture, drawing, talking, and writing yield a complementary whole reflecting an undifferentiated view of the varying symbol systems.

Courtney L., Mikey, Bobby F. and Courtney H. displayed behavior in which their text formed an independent unit from their graphic representations, gestures, or speech. Courtney L., Bobby F., and Courtney H. were observed not to voice or make gestures during the writing act. In addition, Bobby F. and Courtney H. were the only children in this study to extend their text through illustration.

Drawing Functions and the Number of Words Written

There is not one way in which the drawing functions appeared to affect the number of words written in the children's texts. Each child utilized a combination of varying drawing functions in the production of their texts. For each individual, the number of words written gradually increased over time. The observed drawing functions changed over time also; however, no set patterns were observed in which the two elements of change were related.

Instructional Implications

The findings of this study reveal that the act of drawing serves an important function for children ages five to nine while engaged in the writing process. Classroom environments must be preserved that allow young children an opportunity to draw in conjunction with writing.

A Broader View

As educators we must adopt a broader view of learning to write that encompasses all of the symbolic processes. Writing develops in young children as a complex orchestration involving a combination of gesture, speech, and drawing. Children must be allowed the opportunity to access the various symbol systems while learning to write.

Learning environments must allow for a rich intermingling of movement, drawing, talking, and writing. Teachers should encourage natural movement, interaction, and collaboration between their students.

The children in this study displayed great variability and individuality in the way they used drawing in the writing process. Therefore, as teachers we must create learning environments that are broad-based and open-ended allowing for and cultivating diversity and individual differences.

Choice and Self-Selection

Choice and self-selection are two key factors that contribute to a broad-based learning environment. Children need to be able to choose their drawing and writing purposes and activities. Given choices, children can self-select drawing and writing activities that are appropriate to their needs and desires.

The children in this study were given the opportunity to do both. They had an array of drawing and writing tasks to choose from, of which they self-selected from these activities daily. Sometimes they chose to draw and then write; other times they chose to write without drawing. Growth was observed in each of the case study children; they approached drawing and writing with purpose and responsibility.

As teachers we might do well to listen carefully to the children in our efforts to respond more appropriately to their instructional needs. The following remarks were made by several children when they were asked if drawing helped them in their writing activity:

Child 1: I have to draw the pictures 'cuz it, it gives me more ideas.

Child 2: Pictures make me know more ideas.

Child 3: When I'm drawing I kind of think of the thing that I'm drawing.

Child 4: I need to look at the picture a little while and then I can write about it.

These remarks were common amongst the children; although their ability to express themselves varied with age and command of the English language, the sixty-seven children in this study employed drawing to serve an important function in the writing process.

Clearly, it makes sense to young children to draw as they write. We must re-examine teaching practices that only allow children to draw <u>after</u> they finish writing, as well as forcing children to draw and/or write about an assigned topic or "story starter".

Instead, I propose a learning environment that would fit the following characteristics, thus facilitating growth:

1. A broad view of writing as a symbolic activity would exist in which writing activities would be pursued in conjunction with drawing, talking, and movement.

2. Freedom of theme, message, and purpose would be preserved in the child's writing activities.

3. The invention and repetition of form (both graphic and phonetic) would be encouraged.

4. Spontaneous purposeful play in drawing and writing would be encouraged.

Summary

Young children learning to write are involved in a complex process. The interplay between drawing and writing in young children is worthy of further investigation. Bridges of tension and transition seem to be inherent in the different symbol systems which allow resources for growth in the very young child (Dyson, 1986). However, what constitutes the specific bridges of tension and transition and how do the similarities and dissimilarities of these symbol systems combine for individual children of varying developmental levels? This study has attempted to shed insight on the role of drawing in the writing processes of primary grade children in our search for knowledge and appreciation of the complexities that do exist.

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Table 1

Daily Drawing and Writing Activities

Grade Level	Class Activities							
	CR	P	D	PW	I	WB	CD	CW
K (N=17)	15	41	263	331	273	74	29	36
% of Total Frequency	32	47	32	29	34	14	32	23
1st (N=15)	16	25	207	290	209	103	28	34
% of Total Frequency	34	28	25	26	26	20	30	22
2nd (N=19)	12	14	214	316	179	192	18	38
% of Total Frequency	26	16	26	28	23	38	20	24
3rd (N=12)	4	8	141	196	135	144	17	48
% of Total Frequency	8	9	17	17	17	28	18	31
Total Frequency	47	88	825	1133	796	513	92	156

Key: CR = Creating

P = Painting

D = Drawing

PW = Picture Writing

I = Inking

WB = Writing Book

CD = Computer Drawing

CW = Computer Writing (Word Processor)

Table 2

Summary Chart of When Children Draw

Grade Level	K	1	2	3
Number of Individuals	19	15	19	13
Number of Observations	52	47	56	44
Before	40	36	45	27
During	3	6	2	2
After	4	2	2	8
No drawing	8	10	8	11

Table 3

Frequency of Drawing Functions Across Grade Levels

	Drawing Function	Grade Level K	1	2	3	Total Frequency
1.1	Objects to label	23	25	28	11	78
1.2	Focus/theme	12	10	20	17	59
1.3	Re-creates an experience	4	2	4	4	14
1.4	Access to imaginary worlds	6	12	2	3	23
1.5	Pleasurable activity	10	6	2	8	26
2.1	Clarification	1	3	4	6	14
2.2	Illustration	1	2	2	8	13
2.3	Decoration	3	0	3	3	9
3.1	Maintains and supports flow of ideas	2	14	3	6	25

Table 4

The Relationship Between the Drawing Functions and When They Occurred in the Writing Act

	Drawing Function	Total Frequency	Occurrence of drawing behavior in the writing act Before	During	After
1.1	Objects to label	78	78	0	0
1.2	Focus/theme	59	59	0	0
1.3	Re-creates an experience	14	14	0	0
1.4	Access to imaginary worlds	23	23	0	0
1.5	Pleasurable activity	26	26	0	1
2.1	Clarification	14	4	7	3
2.2	Illustration	13	2	0	11
2.3	Decoration	9	2	0	7
3.1	Maintains and supports flow of ideas	25	0	25	0

Table 5

Frequency of Identified Drawing Functions in the Eight Case Study Children

	Drawing Functions								
Name	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	3.1
Stephen	5	6	2	5	0	0	0	0	2
Kelly	5	0	0	4	4	0	0	1	0
Carly	7	0	0	6	4	0	0	0	2
Bobby C.	5	3	1	6	0	3	0	0	4
Mikey	5	5	2	1	0	0	0	0	0
Courtney L.	4	8	0	0	0	0	0	0	0
Bobby F.	4	8	0	0	0	0	2	0	0
Courtney H.	5	5	2	0	4	2	7	0	0

Figure Caption

Figure 1. Daily Log of Drawing and Writing Activities

Figure 2. Interview Response Worksheet

Figure 3. Map of the Classroom

Figure 4. Sample Entries of Logged Drawing Functions

Figure 5. Justin and Bobby's Computer Drawing

Figure 6. Justin and Bobby's Computer Writing

Figure 7. Courtney's Writing

Figure 8. Another Problem in Leprechaun Land

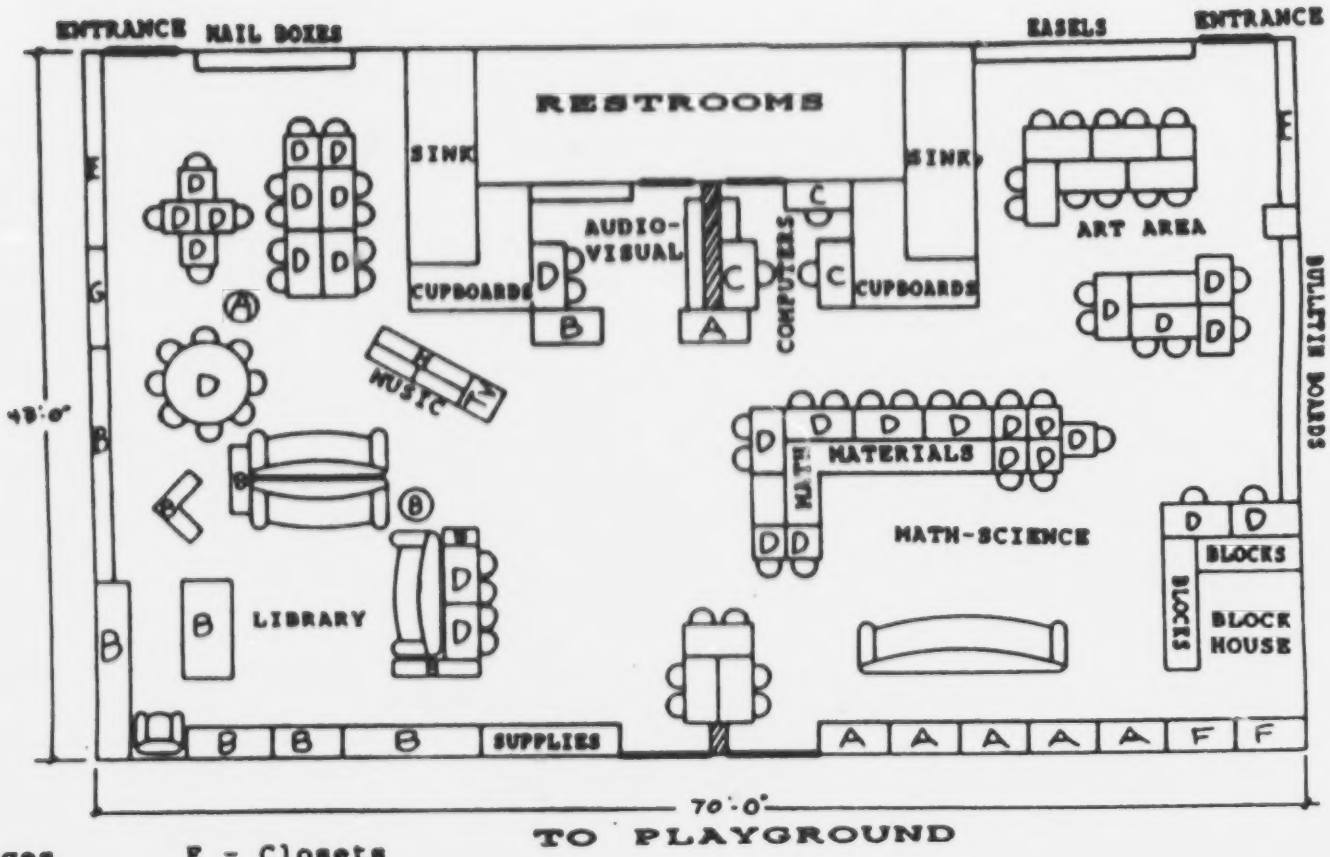
Figure 9. Bobby's Drawing, December 17, 1987

Figure 10. Bobby's Writing, January 5, 1988.

Figure 11. Drawing Functions and the Writing Cycle

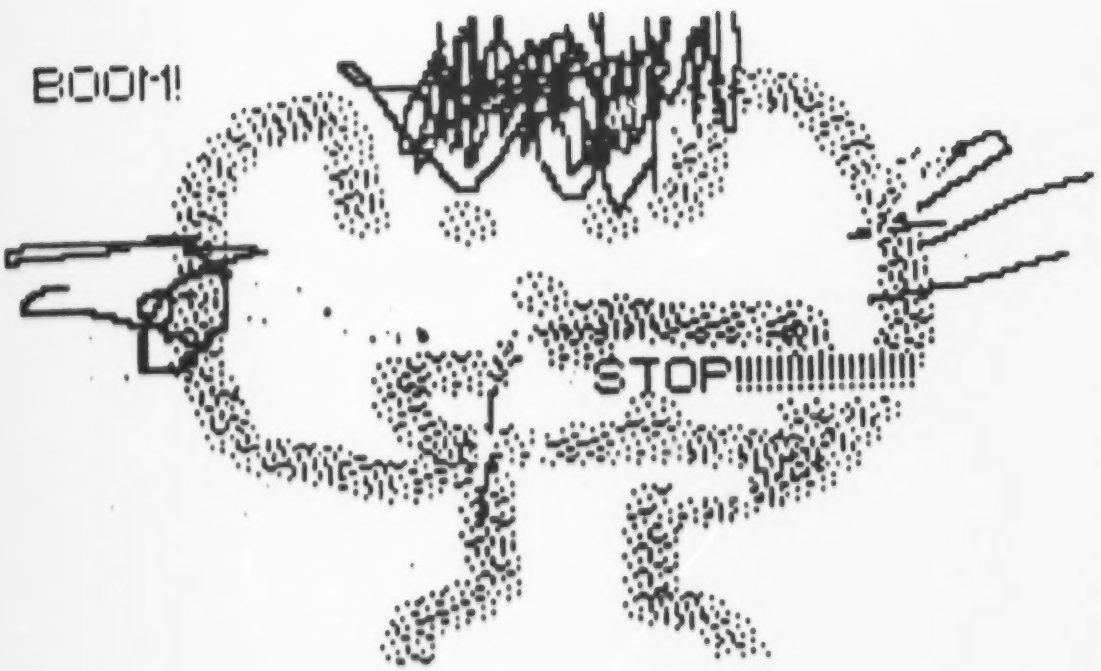
Child's Name Birthdate	Creating=CR Painting=P Drawing=D	Writing	Inking	Writing Book	Computer Drawing	Computer Writing

Child's Name	Date	Tape #	Questions 1	2	3	4	5	6	7	8	9	10	Response



A - Animal cages
B - Bookcases
C - Computers
D - Desks
E - Closets
F - Files
G - Games
H - Stage storage

Date	Child's Name	Grade	When the Child Draws	Drawing Function
9-09-87	Paul	K	before	-provides object to be labeled with words (This is a...)
1-05-88	Mark	1	before	-objects to label
			during	-elaboration -addition of detail to match text -refresh his ideas revive his thought
1-05-88	Leah	2	before	-clarification (for others) "So they can <u>see</u> it" -re-creates a true event in her life -provides ideas/context
1-14-88	Adam	3	before	-provides focus or reduction of possibilities in theme -provides objects to be labeled
			during	-clarification; drawing more detailed than word description, but congruent -transitional; drawing pushes ahead more detail in the writing
2-03-88	Alison	1	before	-re-creates a personal experience -provides object to label (This is my ...)
			after	-illustration of the text -congruent
3-03-88	Sommer	2	no drawing	-Writing Book entry (true) -personal experience -(all other entries are true, too)


BOOM!
STOP!!!

This is Kari. She has a hundred billion cuckoo clocks. There are springs flying out of her head. She is going to take off. An elf is hanging out of her mouth saying, "Stop it. I've got to fix Kari's brain, and take out the cuckoo clocks." All of a sudden there is this big "BOOM!" and Kari takes off like a rocket. She hits a branch on a tree, and lands on her feet and starts chasing us. (Which she has been doing all year).

We don't hang around her because we don't wan't to get cuckoo clocks, or the giggles (Which are contagious). She and her buddies (Hannah, Kendra, Jessica, The Twins, Courtney L. and Shawna) chase us. On our side there is: Adam, Justin and Bobby F. If Kari finds out we're writing this (which she already knows), she will have us for dinner. We can't wait to see what she does because she tried to hit Bobby when he showed her the picture.

By Justin & Bobby F.

9/10/87

The weekend before school started Brooke, my dad, Tia and I went to the beach for the weekend. The first beach we went to had a lot of things to do. B. and I went to a hill, and I got cut with some glass the most. We stayed in had a pool. Then we went to the San Diego Zoo by

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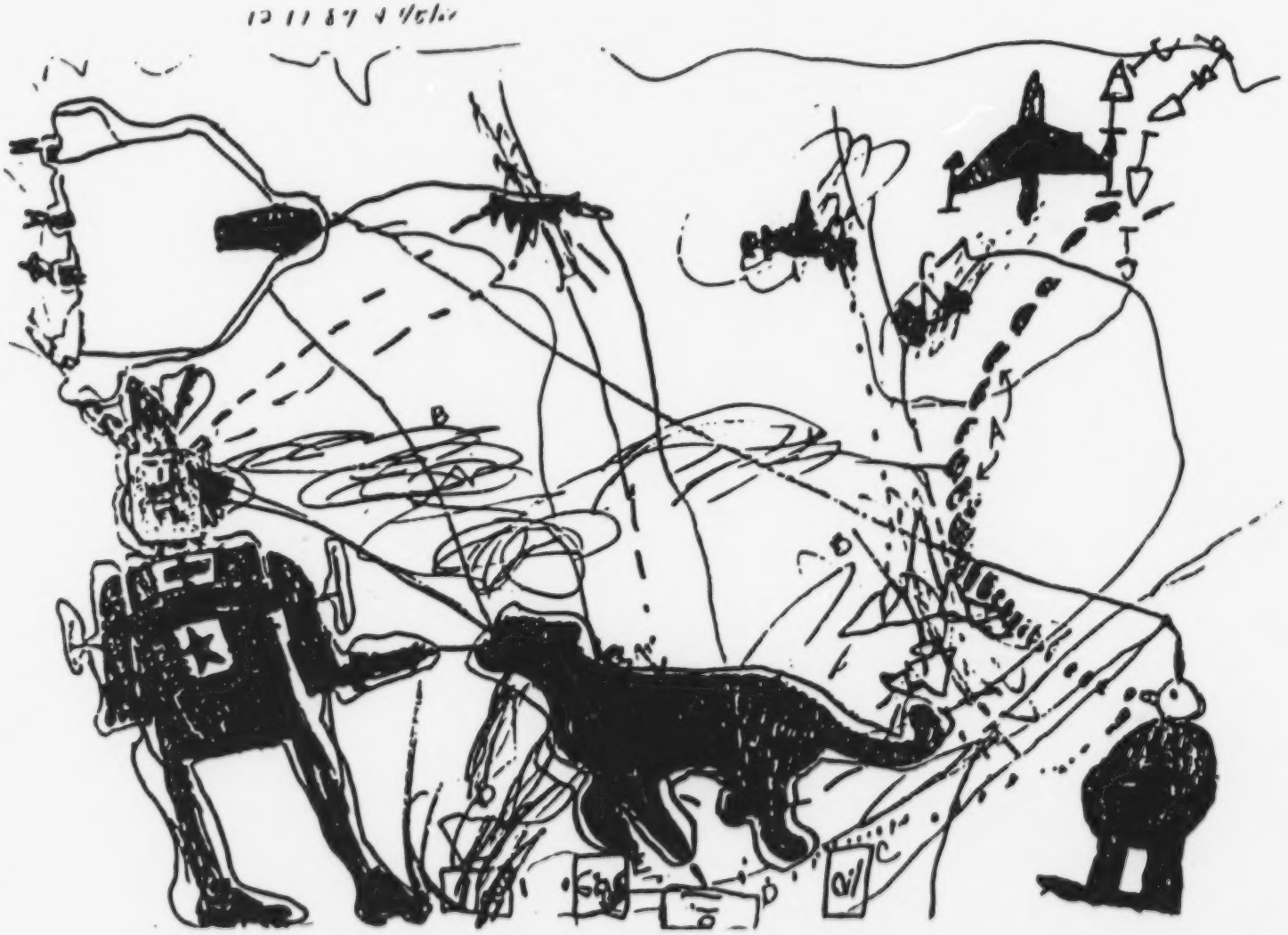
Another Problem in Leprechaun Land



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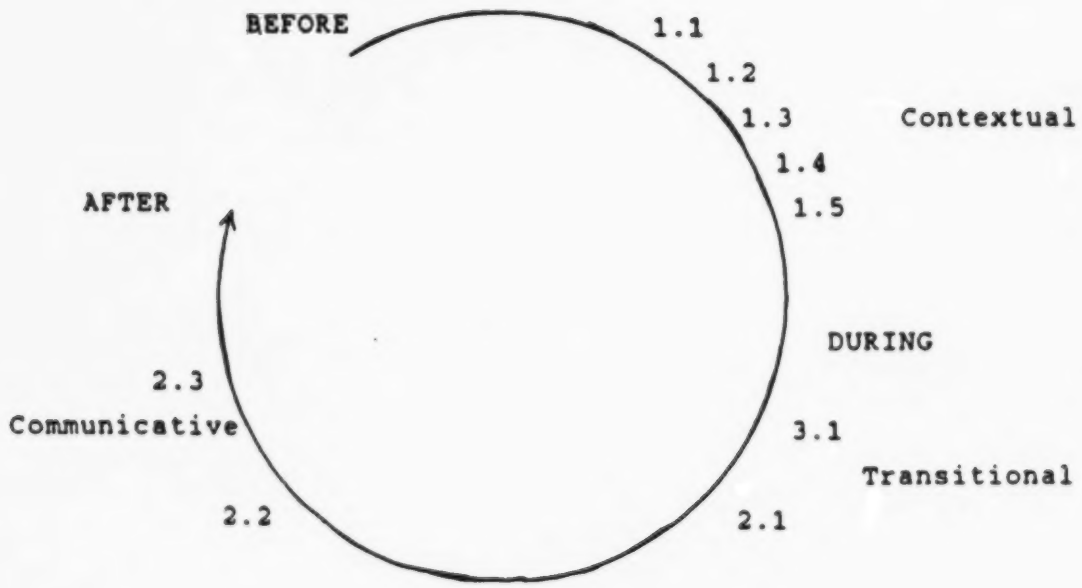
This is world war Two. A force field is protecting Megalon. He can shoot through it. Megalon is trying to shoot the F16. He saw a can of oil and shot it down. Voltron almost slipped. Then Megalon saw a can of gas. knocked it over. Then he spit a fireball at it. Ka Pow Co. P.S. There was fire everywhere.


BEFORE
1.1
1.2
1.3
Contextual
1.4
1.5
AFTER
DURING
2.3
Communicative
3.1
Transitional
2.2
2.1